MODEL OX-60

ATOM OXYGEN ANALYSER

SERVICE MANUAL

FC

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Service and Repair

General Description

The OX-60 contains a single control board together with a high capacity (2800mAh) NiCad battery. The control board includes a microprocessor, power supply, LCD controller, key pad interface, serial interface and data acquisition circuit.

The OX-60 features a factory test operation which can only be enabled by fitting a hardware link to the control PCB (see Factory Test Mode).

Open OX-60

Place the OX-60 face down on to the workbench and remove the four case screws (10). Carefully lift the rear cover (9) 20mm away from the front cover (2). Unclip the sensor cable (8) from the control PCB (4) and place the rear cover (9) to the right of the front cover (2). The battery assembly (7) can remain connected.

Replace Battery

Open the OX-60 as described in the above section.

Undo the power inlet locking nut, remove the power inlet from the back cover (9) and unclip the power connector from the control PCB (4).

After fitting a new battery, the OX-60 is reassembled in the reverse order and the new battery should be recharged for at least 2 hours.

Service and Repair (cont.)

Replace Control PCB

Open the OX-60 as described in the above section.

Unclip the power connector from the control PCB (4). Using tape covered long nose pliers, carefully release the key pad membrane from the black connector. Remove the four mounting screws (5) and lift the control PCB (4) out of the front cover (2).

Always store the control PCB in an static shielding bag.

Replace the control PCB and reassemble the OX-60 in the reverse order. Use tape covered long nose pliers to carefully insert the key pad membrane into the black connector.

Replace Membrane Key Pad

Open the OX-60 and remove the control PCB as described above.

Remove the membrane key pad (2) from the front cover (2). Carefully clean the recess in the front cover and fit a new membrane key pad.

WARNING

The membrane key pad can easily be damaged, exercise extreme care.

Service and Repair (cont.)

Replace Sensor Cable

Open the OX-60 as described in the above section.

Release the P-clamp (6) and separate it from sensor cable. Remove the two sensor cables from within the brown connector and carefully slide the cable out through the hole in the rear cover (9).

Insert a replacement sensor cable through the hole in the rear cover (9) for a distance of 48mm. Fit the brown connector to the end of the cable as shown in figure 2. Attach the P-clamp (6) to the sensor cable and screw the P-clamp (6) to the rear cover.

Reassemble the OX-60.

Factory Test Mode

Factory Test Mode can only be enabled by fitting a hardware link to P4 and can only be used in conjunction with the optional RS232 converter.

The OX-60 Factory Test Interface is via the header P1 and is set to 9600bps, 8 data bits, 1 stop bit and no parity.

Parts List and Circuit Diagram

Parts List

Reference	Description	Quantity	Part Number
1	Membrane Key Pad	1	OX-60-005
2	OX-60 Case, Top	1	OX-60-001
3	Window Acrylic	1	OX-60-006
4	Control PCB	1	OX-60-005
5	Screw, 3g x 5mm	5	OX-60-011
6	Cable Clamp	1	OX-60-012
7	Battery Assembly	1	OX-60-007
	Cable, Sensor	1	OX-60-008
9	OX-60 Case, Back	1	OX-60-002
10	Screw	4	OX-60-003

Specifications

Dimensions/Environment

Size:	145mm x 80mm x 42mm
Weight:	350gm
Material:	ABS
Sensor Cable:	600mm
Operating Temp	0-45°C

Battery/Charger

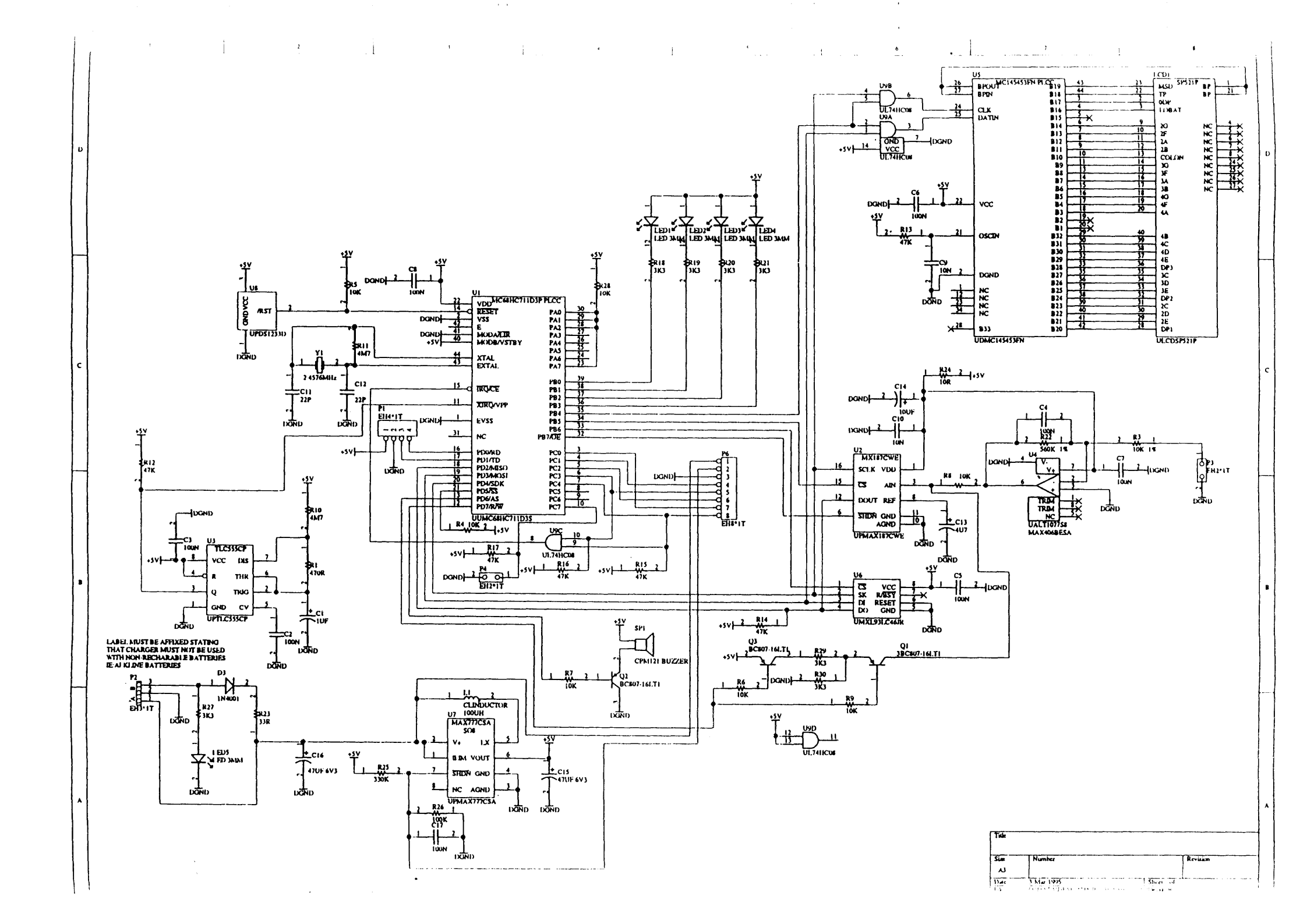
Type:	C Size Nickel Cadmium	Capacity: 2800mAh
Life:	1100 hours (no alarms running)	
Charger:	Internal trickle charger	
Power:	External Plug Pack 3.0VDC	

Display, Indicators and Keys

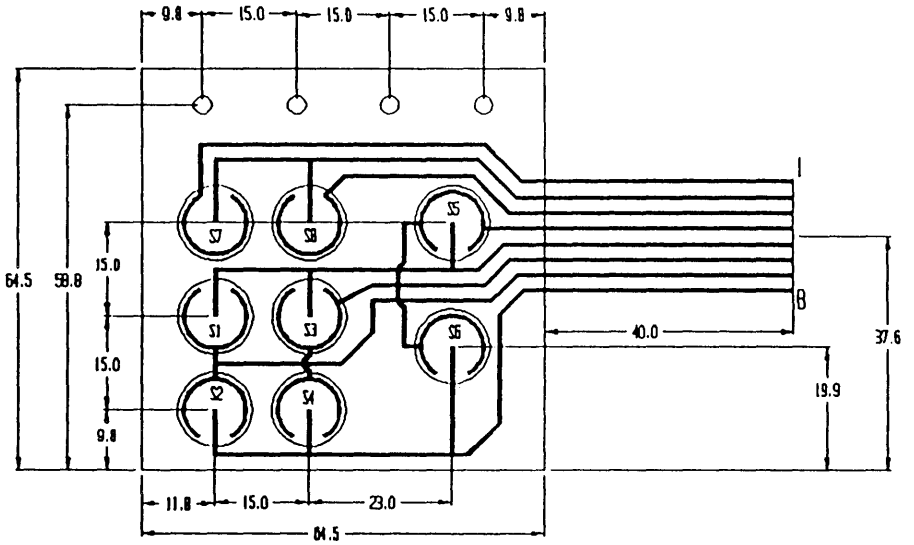
Type:	3½ digit LCD
Digit Size:	7mm x 12.7mm
Range:	0 to 100% Oxygen
Resolution:	1% Oxygen
Accuracy:	±1%
Linearity:	±1%
Response:	Less than 10s for 90% of new value
User Buttons:	ON OFF LOW HIGH SILENT CALIBRATE
Visual Alarms:	High Oxygen, Low Oxygen, No Sensor
Audible Alarm:	Pulsed Buzzer 70dB

Sensor

Type:	Galvanic Fuel Cell
Range:	0 - 100% Oxygen
Output:	10mV ±2mV at 20.9% Oxygen
Response:	Less 10s for 90% of new value
Temp Compensation:	Yes
Manufacturer:	Atom
Part Number:	R 17

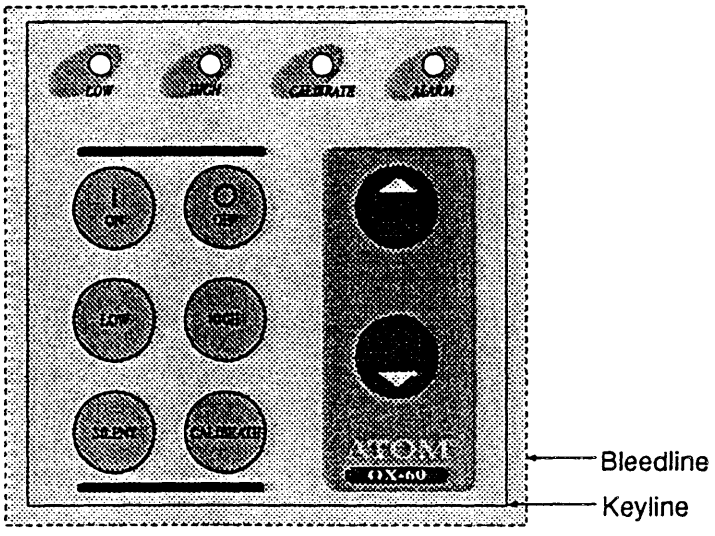

LABEL MUST BE AFFIXED STATING
THAT CHARGER MUST NOT BE USED
WITH NON-RECHARABLE BATTERIES
IE: ALKALINE BATTERIES
Title
Size
A3
Number
Revision
Date: 3 Mar 1995
Sheet of

REVISIONS			
REV	DESCRIPTION		APPROVED
A	REVISED KEY LAYOUT		GMJ



1 ON-S7
2 COM-S7/S8
3 OFF-S8
4 X-S5/S6
5 Y-S1/S3/S5
6 X-S3/S4
7 X-S1/S2
8 Y-S2/S4/S6

	DX60 MEMBRANE KEY PAD			
APPROVED: GMJ	SIZE	FSCM NO.	DWG NO. 2332-002	REV A
	SCALE 1:1		SHEET 1 OF 1	


LOW
HIGH
CALIBRATE
ALARM
ATOM
Bleedline
Keyline